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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/587,384	SKULTETY-BETZ ET AL.
	Examiner	Art Unit
	CAROLYN IGYARTO	2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 29 June 2009.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 17-33 is/are pending in the application.
 4a) Of the above claim(s) 26-33 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 17-25 and 35 is/are rejected.
 7) Claim(s) 36 and 37 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 24 July 2006 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Response to Amendment

1. The amendment filed on 03 March 2009 was accepted and entered.

Accordingly, claims 17 and 26 were amended. Claims 1-16 and 34 have been cancelled. Claim 35 was newly added.

2. The amendment filed on 29 June 2009 was accepted and entered. Accordingly, no claims have been amended. Claims 1-16 and 34 remain cancelled. Claims 36-37 have been newly added. Thus, claims 17-33 and 35-37 are currently pending in this application.

3. In view of the cancellation of claim 34, the previous objection to the claims has been withdrawn.

Election/Restrictions

4. Claims 26-33 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 29 June 2009.

In the case of independent claims to A + X and A + Y, unity of invention is present a priori as A is common to both claims. However, if it can be established that A is known, there is lack of unity a posteriori, since A (be it a single feature

or a group of features) is not a technical feature that defines a contribution over the prior art. See MPEP 1850(II)

5. Both independent claims 17 and 26 require:
 - A) at least one photometric sensor, which generates a measurement signal that is evaluated to obtain information about the object enclosed in the medium
6. Systems and methods involving evaluating and obtaining information about an object within a medium using information obtained by a photometric sensor is well known in the art.
7. Independent claim 17 requires:
 - B) at least one further sensor
 - C) displacement sensor
 - D) display that depicts signal characteristics detected by the displacement sensor
8. Independent claim 26 requires:
 - E) evaluating at least one further measurement signal, which is obtained by the at least one photometric sensor
 - F) determining the desirability of the signals for subsequent data processing
 - G) selectively displaying the desired information

9. Claim 26 does not include the features B, C, and D, as described above. Claim 17 does not include the features E, F, and G, as described above.

Drawings

10. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the displacement sensor and a circuit that activates a predefined search routine must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

11. Claims 36-37 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claims 36-37 have not been further treated on the merits.

12. Claim 17 is objected to because of the following informalities: lines 3-5 recite “an object” twice, while lines 1-2 previously recite “at least one object”. Whether these are the same objects or different object a correction is necessary to make the claims clear. Appropriate correction is required. For purposes of a prior art search the Examiner is interpreting every “object” to be the same “object” recited previously.

Claim Rejections - 35 USC § 112

13. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

14. Claims 17-25 and 35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed,

had possession of the claimed invention. A display that depicts signal characteristics detected by a displacement sensor seems to not have been originally disclosed.

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claims 17-25 and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Signal characteristic detected by a displacement sensor is unclear and indefinite, because a displacement sensor would provided displacement and/or positional information of the device, however would not provided signal characteristics. Signal characteristics typically have the meaning of signals representing a characteristic or characteristics of an object such as material or temperature. "Signal characteristics" has not been defined differently by applicant. For purposes of an art search, based on the original disclosure, the Examiner is interpreting "a display that depicts signal characteristic detected by a displacement sensor" to mean a display, which displays displacement information detected by a displacement sensor.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

19. Claims 17-19 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szu (US Patent 5,952,957) in view of Foessel et al. ("Radar Sensor for an Autonomous Antarctic Explorer").

20. With respect to **claim 17**, Szu discloses a handheld measuring device for localizing at least one object enclosed in a medium, comprising:

at least one photometric sensor that obtains a first measurement signal of an object to be examined, wherein by evaluation of the measurement signal, information about an object enclosed in the medium is obtained (claim 9, Column 10, lines 54-56); and

at least one further sensor for generating at least one further second measurement signal for obtaining information about the object enclosed in the medium (claim 9, column 10, lines 57-59).

a display (104) that depicts information detected.

21. Szu does not explicitly teach including a displacement sensor or having the display depict information detected by the displacement sensor. However, Foessel teaches including a GPS to provide position measurements, which are output to a user, for the benefit of providing ground truth and mapping of the location of hazards and interesting subsurface objects and features (Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a displacement sensor, such as the GPS taught by Foessel, in the measuring device, as taught by Szu, and have the display, as taught by Szu, include the position information acquired by the displacement sensor, as taught by Foessel, for the benefit of providing ground truth and mapping of the location of hazards and interesting subsurface objects and features.

22. Regarding **claim 18**, Szu discloses that the at least one photometric sensor includes an infrared sensor (See claim 9, column 10, lines 54-56).

23. Regarding **claim 19**, Szu discloses that the at least one further sensor includes a radar sensor (See claim 9, column 10, lines 57-59).

24. With respect to **claim 35**, Szu teaches a circuit (101) that activates a predefined search routine (col. 1, lines 65-67; col. 2, lines 47-50).

25. Claims 17-21, 24-25, and 35 are rejected under 35 U.S.C. 102(e) as anticipated by Campana (US Pre Grant Publication 2003/0193429) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Foessel et al. ("Radar Sensor for an Autonomous Antarctic Explorer").

26. Regarding **claim 17**, Campana discloses a handheld measuring device for localizing at least one object enclosed in a medium, comprising:

at least one photometric sensor that obtains a first measurement signal of an object to be examined, wherein by evaluation of the measurement signal, information about an object enclosed in the medium is obtained (see figure 7A, element 140 and see figure 5, discloses discovering an object element 40), ; and

at least one further sensor for generating at least one further second measurement signal for obtaining information about the object enclosed in the medium (See figure 7A, elements 70= Ground Penetrating Radar detector OR element 80= Electromagnetic Inductive detector, in addition to the IR detector, element 140).

a displacement sensor (210) and a display (130) that depicts the information obtained from the detectors ([0045]).

27. In the alternative, if it is held that the display taught by Campana does not provide positional information; Then, Foessel teaches outputting the positional information obtained for the benefit of providing ground truth and mapping of the

location of hazards and interesting subsurface objects and features (Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to display the information obtained by the displacement sensor for the benefit of providing ground truth and mapping of the location of hazards and interesting subsurface objects and features.

28. Regarding **claim 18**, Campana discloses that the at least one photometric sensor includes an infrared sensor (see figure 7A, element 140 = IR sensor).

29. Regarding **claim 19**, Campana discloses that the at least one further sensor includes a radar sensor (element 70= GPR sensor = radar sensor).

30. Regarding **claim 20**, Campana does not disclose the specifics of the GPR. However, GPR detection systems inherently require a broadband sensor of a pulsed radar. (See Foessel et al, in cited pertinent art. This is merely cited to illustrate that this limitation is inherent to GPR).

31. Regarding **claim 21**, Campana discloses that the at least one further sensor includes an inductive sensor (Figure 7a, element 80 = Electromagnetic Inductive detector).

32. Regarding **claim 24**, Campana discloses that the at least two of the sensors are integrated into a common housing of the measuring device (see figure 6, element 30 = housing for all detector elements).

33. Regarding **claim 25**, Campana discloses that at least two of the sensors are disposed on a common circuit board (see figure 7A, all detectors share the common substrate).

34. With respect to **claim 35**, Campana teaches a circuit that activates a predefined search routine ([0002]; [0013]).

35. Claims 17-18, 21-25, and 35 rejected under 35 U.S.C. 103(a) as being unpatentable over Steinthal (US Patent 7034677 B2) in view of Foessel et al. ("Radar Sensor for an Autonomous Antarctic Explorer").

36. Regarding **claim 17**, Steinthal discloses a handheld measuring device (see figure 3A, element 15 = plurality of sensors) for localizing at least one object enclosed in a medium, comprising:

at least one photometric sensor that obtains a first measurement signal of an object to be examined, wherein by evaluation of the measurement signal, information about an object enclosed in the medium is obtained (column 21, lines 41-52, discloses detection of IR radiation); and

at least one further sensor for generating at least one further second measurement signal for obtaining information about the object enclosed in the medium (Column 21, lines 58-61 discloses detection of capacitance, inductance); and a display that depicts information detected to a user.

37. Steinthal does not explicitly teach including a displacement sensor or having the display depict information detected by the displacement sensor. However, Foessel teaches including a GPS to provide position measurements, which are output to a user, for the benefit of providing ground truth and mapping of the location of hazards and interesting subsurface objects and features (Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a displacement sensor, such as the GPS taught by Foessel, in the measuring device, as taught by Steinthal, and have the display, as taught by Steinthal, include the position information acquired by the displacement sensor, as taught by Foessel, for the benefit of providing ground truth and mapping of the location of hazards and interesting subsurface objects and features.

38. Regarding **claim 18**, Steinthal discloses that the at least one photometric sensor includes an infrared sensor (See column 21, lines 48-52).

39. Regarding **claim 21**, Steinthal discloses that the at least one further sensor includes an inductive sensor (column 21, lines 58-61).

40. Regarding **claim 22**, Steinthal discloses that the at least one further sensor includes a capacitive sensor (column 21, lines 58-61).

41. Regarding **claim 23**, Steinthal discloses that the at least one further capacitive sensor includes a high-frequency capacitive sensor that, by measuring an impedance of its electrodes, obtains information about objects enclosed in the medium (Column 21, lines 58-61).

42. Regarding **claim 24**, Steinthal discloses that at least two of the sensors are integrated into a common housing of the measuring device (See figure 3a, sensors are placed in housing element 10).

43. Regarding **claim 25**, Steinthal discloses that the at least two of the sensors are disposed on a common circuit board (see figure 5, all sensors are placed on the same PCB).

44. With respect to **claim 35**, Steinthal teaches a circuit (20; 120) that activates a predefined search routine (Abstract; col. 2, lines 49-54; col. 9, lines 55-65; Figs. 1a-b).

Double Patenting

45. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

46. Claims 17-20 and 24-25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 23, 24, 23, 27, 25, 26, 28, 32, 33, 34, 35, 36, 37, respectively of copending Application No. 10/589401. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both describe the same detector apparatus and method of detecting.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

47. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAROLYN IGYARTO whose telephone number is (571)270-1286. The examiner can normally be reached on Monday - Thursday, 7:30 A.M. to 5 P.M. E.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David P. Porta/
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